

## PARTS LIST

KAP-2 (Y60-4040-20)

\*: New parts

Ref. No.	New parts	Parts No.	Description				
KAP-2				RELAY UNIT (X41-3670-20)			
	*	E23-1257-05	CRIMP TERMINAL	C1-5	CK73FB1H102K	CHIP C	1000PF K
	*	E37-1113-05	LEAD WIRE WITH CONNECTOR	C7,8	CK73FB1E103K	CHIP C	0.010UF K
	*	E37-1114-05	LEAD WIRE WITH CONNECTOR	CN1	E18-0254-05	SOCKET	
	*	E59-0419-05	SQUARE PLUG	CN2	* E40-6375-05	PIN ASSY	
	*	F29-0481-05	INSULATING COVER	CN3	* E40-6394-05	PIN ASSY	
	*	G53-1643-04	PACKING	R3,4	R92-0670-05	CHIP R	0 OHM
	*	N87-2606-48	BRAZIER HEAD TAPTITE SCREW	K1,2	* S76-0451-05	RELAY	
				D1,2	1SS355	DIODE	
				Q1,2	DTD114EK	DIGITAL TRANSISTOR	

# KAP-2

## CIRCUIT DESCRIPTION / COMPONENTS DESCRIPTION / TERMINAL FUNCTION

### Circuit Description

#### ■ Public Address (PA) function

The PA output switching relay is controlled by turning the PA function on and off. When the PA is activated, the PA output flows through the following path.

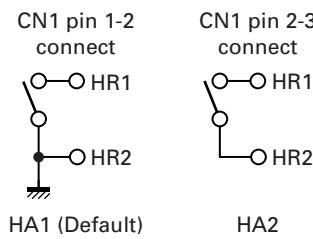
The audio signal input from the microphone passes through the filter, amplifier and other circuits of the TX-RX unit (B/3) and goes to pin 5 (SPI) of CN3 of the relay unit. The audio signal passes through the relay (K2) and is output to pin 3 (OSP) of CN2.

#### ■ Horn Alert (HA) function

The relay unit can be controlled by turning the HA function on and off and by using a signaling decode output. The maximum current of HA is 2A.

There are two Horn Alert settings: HA1 (Default) and HA2. HA2 can be set by changing the short pin of CN1.

CN1 Connect	Set Up
1-2	HA1
2-3	HA2



#### ■ External Speaker (KES-5)

External speaker KES-5 can be installed for KAP-2. If KES-5 is installed, it can be set by changing the CN1 short pin from pins 4 and 5 (INT SP) to pins 5 and 6 (EXT SP).

CN1 Connect	Set Up
4-5	INT. SP
5-6	EXT. SP

### Components Description

#### ■ Relay unit (X41-3670-20)

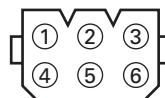
Ref. No.	Part name	Description
Q1,2	Transistor	Switching
D1,2	Diode	Reverse electromotive force protection

### Terminal Function

#### ■ Relay unit (X41-3670-20)

Pin No.	Name	I/O	Description
<b>CN1</b>			
1	GND	-	Ground.
2	HR2	O	Horn alert signal output 2.
3	NC	-	Non-connection.
4	SPO	I	Speaker input.
5	SPI	O	Speaker output.
6	ESP	I	Speaker input.
<b>CN2</b>			
1	HR2	O	Horn alert signal output 2.
2	GND	-	Ground.
3	OSP	O	External speaker output (PA).
4	ESP	O	External speaker output.
5	GND	-	Ground.
6	HR1	I	Horn alert signal input 1.
<b>CN3</b>			
1	GND	-	Ground.
2	HOR	I	Control signal input of Horn Alert function.
3	PA	I	Control signal input of Public Address function.
4	SPO	O	Speaker output.
5	SPI	I	Speaker input.
6	SB	I	Power input of switched power supply.

#### ■ Cable (E37-1113-05) 6-pin Connector



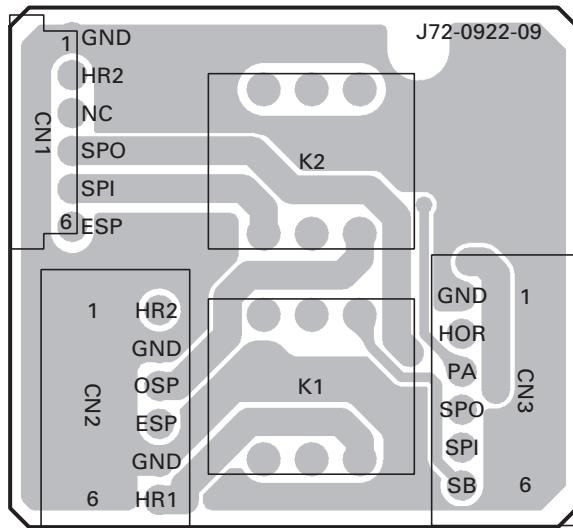
Pin No.	Color	Name
1	Red	HR2
2	Blue	GND
3	Yellow	OSP
4	Green	ESP
5	Brown	GND
6	Black	HR1

# PC BOARD / SCHEMATIC DIAGRAM

## PC Board

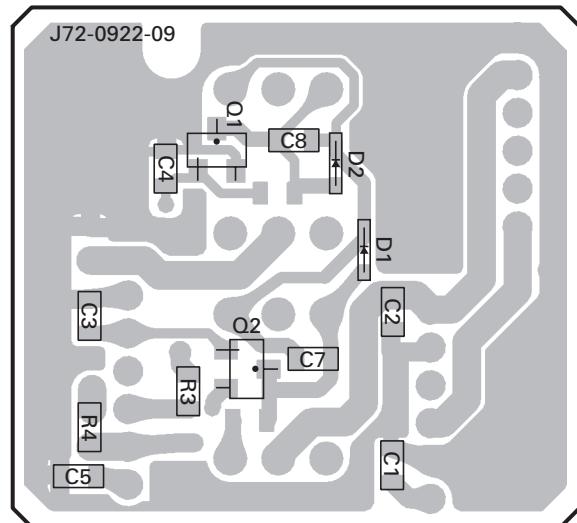
### RELAY UNIT (X41-3670-20)

Component side view (J72-0922-09)



### RELAY UNIT (X41-3670-20)

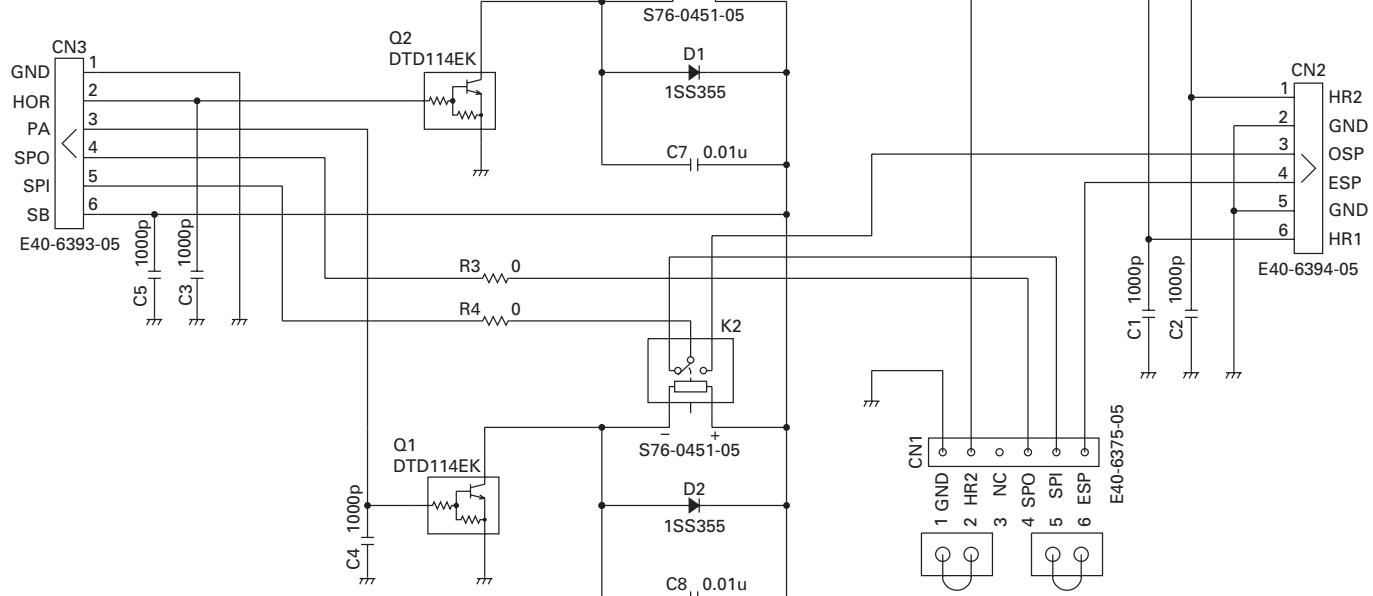
Foil side view (J72-0922-09)



## Schematic Diagram

### ■ RELAY UNIT (X41-3670-20)

CN1 CONNECT	HOR	HR1	CN1 CONNECT	PA	AF
1-2	LO	HR1-Open	4-5	LO	SPI-SPO
	HI	HR1-GND		HI	SPI-OSP
2-3	LO	HR1-Open	5-6	LO	SPI-ESP
	HI	HR1-HR2		HI	SPI-OSP



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